

AMENDMENTS TO THE CLAIMS

Please amend Claims 1, 9, 11, 15, 23, 25, and 29 as follows, without prejudice or disclaimer to continued examination on the merits:

1. (currently amended): An extended, multi-spot x-ray source for computed tomography or volume computed tomography imaging, comprising:

an electron gun ~~capable of~~ for producing a plurality of electron beams, each electron beam focused at a predetermined distance and aimed in a predetermined direction; and

a plurality of targets positioned to receive the electron beams and generate x-rays in response thereto, each target comprising a predetermined focal spot thereon, and at least one target configured to let electron beams pass therethrough and strike another target at predetermined intervals; and

~~wherein means for synchronizing each electron beam is synchronized to strike, at an appropriate~~ a predetermined time, a predetermined target comprising a predetermined focal spot thereon.

2. (original): The x-ray source of claim 1, wherein each target comprises a different focal spot thereon.

3. (original): The x-ray source of claim 1, wherein each electron beam is focused at a different distance.

4. (original): The x-ray source of claim 1, wherein each electron beam is aimed in a different direction.

5. (original): The x-ray source of claim 1, wherein each electron beam strikes a different target having the appropriate focal spot thereon.

6. (original): The x-ray source of claim 1, wherein the plurality of targets rotate about an axis of rotation.
7. (original): The x-ray source of claim 1, wherein a single electron beam, focused at a predetermined distance, strikes only one target, comprising a matching predetermined focal spot thereon, at a time.
8. (canceled)
9. (currently amended): The x-ray source of claim ~~8~~ 1, wherein at least one target comprises a cut-out section that allows electron beams to pass therethrough and strike another target at predetermined intervals.
10. (original): The x-ray source of claim 1, further comprising:
a sensing device for identifying a rotational position of the targets.
11. (currently amended): The x-ray source of claim 10, wherein the sensing device comprises:
a magnetic material disposed on a rotor; and
a magnetic pick-up device disposed in close proximity to the magnetic material;,
wherein, when the rotor spins around its axis of rotation, the magnetic pick-up device obtains a voltage or current signal as the magnetic material passes thereby, and then the magnetic pick-up device transmits an appropriately treated and amplified signal to the electron gun to do at least one of: change electron beam focusing parameters, and make deflection corrections.
12. (original): The x-ray source of claim 1, wherein adjusting a focal bias voltage placed on the electron gun accomplishes at least one of: focusing at least one electron beam, and changing electron beam properties.

13. (original): The x-ray source of claim 1, wherein adjusting an accelerating voltage placed on the electron gun accomplishes at least one of: focusing at least one electron beam, and changing electron beam properties.

14. (original): The x-ray source of claim 1, wherein multi-slice images having a total thickness of up to about 160mm can be obtained in a single gantry rotation.

15. (currently amended): A method for obtaining thick multi-slice images in a single gantry rotation in computed tomography or volume computed tomography, the method comprising:

providing an electron gun ~~capable of~~ for producing a plurality of electron beams, each electron beam focused at a predetermined distance and aimed in a predetermined direction; ~~and~~

providing a plurality of targets positioned to receive the electron beams and generate x-rays in response thereto, each target comprising a predetermined focal spot thereon, and at least one target configured to let electron beams pass therethrough and strike another target at predetermined intervals; and

synchronizing each electron beam to strike, at ~~an appropriate~~ a predetermined time, a predetermined target comprising a predetermined focal spot thereon.

16. (original): The method of claim 15, wherein each target comprises a different focal spot thereon.

17. (original): The method of claim 15, wherein each electron beam is focused at a different distance.

18. (original): The method of claim 15, wherein each electron beam is aimed in a different direction.

19. (original): The method of claim 15, wherein each electron beam strikes a different target having the appropriate focal spot thereon.

20. (original): The method of claim 15, wherein the plurality of targets rotate about an axis of rotation.

21. (original): The method of claim 15, wherein a single electron beam, focused at a predetermined distance, strikes only one target, comprising a matching predetermined focal spot thereon, at a time.

22. (canceled)

23. (currently amended): The method of claim ~~22~~ 15, wherein at least one target comprises a cut-out section that allows electron beams to pass therethrough and strike another target at predetermined intervals.

24. (original): The method of claim 15, further comprising:
providing a sensing device for identifying a rotational position of the targets.

25. (currently amended): The method of claim 24, wherein the sensing device comprises:

a magnetic material disposed on a rotor; and

a magnetic pick-up device disposed in close proximity to the magnetic material;
wherein, when the rotor spins around its axis of rotation, the magnetic pick-up device obtains a voltage or current signal as the magnetic material passes thereby, and then the magnetic pick-up device transmits an appropriately treated and amplified signal to the electron gun to do at least one of: change electron beam focusing parameters, and make deflection corrections.

26. (original): The method of claim 15, further comprising:

adjusting a focal bias voltage placed on the electron gun to accomplish at least one of: focusing at least one electron beam, and changing electron beam properties.

27. (original): The method of claim 15, further comprising:

adjusting an accelerating voltage placed on the electron gun to accomplish at least one of: focusing at least one electron beam, and changing electron beam properties.

28. (original): The method of claim 15, wherein multi-slice images having a total thickness of up to about 160mm can be obtained in a single gantry rotation.

29. (currently amended): A computed tomography or volume computed tomography imaging system, comprising:

an extended, multi-spot x-ray source for computed tomography or volume computed tomography imaging, comprising:

an electron gun ~~capable of~~ for producing a plurality of electron beams, each electron beam focused at a predetermined distance and aimed in a predetermined direction; and

a plurality of targets positioned to receive the electron beams and generate x-rays in response thereto, each target comprising a predetermined focal spot thereon, and at least one target configured to let electron beams pass therethrough and strike another target at predetermined intervals;

~~wherein means for synchronizing~~ each electron beam is ~~synchronized~~ to strike, at ~~an appropriate~~ a predetermined time, a predetermined target comprising a predetermined focal spot thereon; and

an x-ray detector; wherein the x-ray source projects a multi-spot beam of x-rays towards the x-ray detector, the x-ray detector detects the x-rays, and an image is created therefrom.

Please cancel Claims 8 and 22 as indicated above, without prejudice or disclaimer to continued examination on the merits.